

REMARKS

Further and favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

Initially, although the Office Action Summary page indicates that claims 1-3 are pending in the application, the pending claims at the time of issuance of the Office Action were claims 1-4, which are set forth in the preliminary amendment filed with the application papers on November 23, 2005.

Claim 1 has now been amended to incorporate the subject matter of claim 2. Accordingly, claim 2, as well as claim 4 which depends on claim 2, have been cancelled.

The patentability of the presently claimed invention over the disclosure of the reference relied upon by the Examiner in rejecting the claims will be apparent upon consideration of the following remarks.

Thus, the rejection of claims 1-3 under 35 U.S.C. §102(e) as being anticipated by Ito et al. (U.S. 6,633,624), as applied to amended claim 1, and claim 3, is respectfully traversed.

The distinguishing feature of the claimed invention over Ito et al. is the use of a specific type of **uniform particle size** strongly basic porous anion exchange resin in combination with a strongly acidic gel-type cation exchange resin in a mixed bed for demineralization in nuclear power plants, instead of a porous anion exchange resin having a Gaussian particle size distribution (referred to at, for example, page 4, lines 2 and 20 of the present specification).

It is known in the technical field of demineralization for nuclear power plants that a porous anion exchange resin is useful for removing organic impurities (TOC) leaching from cation exchange resins incorporated in a condensate demineralizer. Conventional porous anion exchange resins used for this application include those having a Gaussian particle size distribution, such as DOWEX™ MSA-1 (commercially available from Dow Chemical Co.), IRA900 (commercially available from Rohm and Haas Co.) and PA312 (Mitsubishi Chemical Co.), as described in Ito et al. in column 5, lines 34-41.

In comparison with a gel-type anion exchange resin, a porous anion resin having a Gaussian particle size distribution is disadvantageous in performance in kinetics and regeneration efficiency (page 2, lines 17-25 of the present specification).

Therefore, the claimed invention provides a solution for improving performance in kinetics and regeneration efficiency by using a specific type of **uniform particle size** porous anion exchange resin instead of a porous anion exchange resin having a Gaussian particle size distribution as in Ito et al.

In the Office Action, the Examiner recognizes Dowex MSA-1 mentioned in Ito et al. as a uniform particle size porous anion exchange resin. The Examiner may have had in mind Example 2 of the present application in which Dowex MSA-1 was used as porous anion exchange resin.

However, please note that in Example 2 of the present application, Dowex MSA-1 was used as a **comparative**, conventional porous anion exchange resin with respect to Dowex MP-725A as an exemplary uniform particle size porous anion exchange resin to be used in the presently claimed invention.

Applicants confirm that Dowex MSA-1 has a Gaussian type particle size distribution, but is not a uniform particle size porous anion exchange resin. As noted in paragraph [0031] of the present specification, which is part of Example 2, the uniform particle size anion resin according to the present invention shows a higher demineralization factor than that of the Gaussian distribution anion resin, indicating that the present invention is advantageous in kinetics. As also indicated therein, based on the fact that the reaction kinetics of this uniform particle size porous anion resin are comparable to the reaction kinetics of the Gaussian distribution gel-type resin, it is apparent that the kinetics problem associated with the combination with a gel-type cation resin has been solved.

Ito et al. is silent about the particle size distribution of conventional porous anion exchange resins.

In conventional anion exchange resins having a Gaussian particle size distribution, such as Dowex MSA-1, about 50% of resin particles are within a range of the average particle size $\pm 100 \mu\text{m}$.

On the other hand, in uniform particle size anion exchange resins used in the present invention, **95% or more** of resin particles are within the range of the average particle size $\pm 100 \mu\text{m}$.

Accordingly, the uniform particle size anion exchange resin used in the claimed invention is clearly distinguishable from the conventional anion exchange resins in particle size distribution.

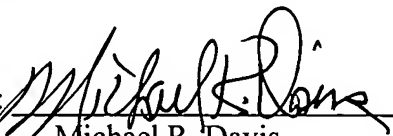
Ito et al. neither teach nor suggest use of a uniform particle size strongly basic porous anion exchange resin in a mixed bed for demineralization in a nuclear power plant.

For these reasons, Applicants take the position that the presently claimed invention is clearly patentable over the reference applied by the Examiner in rejecting the claims.

Therefore, in view of the foregoing amendments and remarks, it is submitted that the ground of rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

Respectfully submitted,

Takeshi IZUMI et al.

By: 
Michael R. Davis
Registration No. 25,134
Attorney for Applicants

MRD/kh
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
September 12, 2008